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D350-748-243TRN
Job Sheet 201055



Part No: D350-748-243TRN

Job Qty: 1 pcs

Part Name: Crosstube Installation, High Aft



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 9/23/19

Job Tracking No:

Due Date: 11/22/19

Created By: Jennifer Renwick

Type: Stock

Description:

Note: DWG REV A IPP Rev:A New Issue LL 12.05.08

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Lead Time	DAS	Sign off
					Setup Hrs	Run Hrs	Workcenter / Supplier				
100	Mori Seiki TL-40 - 1	1 pcs	11/22/19	11/22/19	1.00	3.57	Mori Seiki TL-40 - 1			66	2019/10/04
110	QC 2	1 pcs	11/22/19	0.00	0.00		QC 2 - 1			9-89	
							QC 2 - 12				
							QC 2 - 14				
							QC 2 - 17				
							QC 2 - 19				
							QC 2 - 2				
							QC 2 - 20				
							QC 2 - 22				
							QC 2 - 23				
							QC 2 - 25				
							QC 2 - 32				
							QC 2 - 33				
							QC 2 - 35				
							QC 2 - 39				
							QC 2 - 4				
							QC 2 - 40				
							QC 2 - 44				
							QC 2 - 45				
							QC 2 - 48				
							QC 2 - 49				
							QC 2 - 50				
							QC 2 - 51				
							QC 2 - 52				
							QC 2 - 57				
							QC 2 - 62				
							QC 2 - 63				

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					QC 2 - 8	DAS
					QC 2 - 66	66 2019/10/04
					QC 2 - 64	9-89
					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	DAS
120	Mori Seiki TL-40 - 1 - B4B	1 pcs	11/22/19	1.00 3.57	Mori Seiki TL-40 - 1 - B4B	66 2019/10/09
130	QC 2	1 pcs	11/22/19	0.00 0.00	QC 2 - 1	9-89
					QC 2 - 12	
					QC 2 - 14	
					QC 2 - 17	
					QC 2 - 19	
					QC 2 - 2	
					QC 2 - 20	
					QC 2 - 22	
					QC 2 - 23	
					QC 2 - 25	
					QC 2 - 32	
					QC 2 - 33	
					QC 2 - 35	
					QC 2 - 39	
					QC 2 - 4	
					QC 2 - 40	
					QC 2 - 44	
					QC 2 - 45	
					QC 2 - 48	
					QC 2 - 49	
					QC 2 - 50	
					QC 2 - 51	
					QC 2 - 52	
					QC 2 - 57	
					QC 2 - 62	
					QC 2 - 63	
					QC 2 - 8	DAS
					QC 2 - 66	66 2019/10/09
					QC 2 - 64	9-89
					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
140	QC 8	1 pcs	11/22/19	0.00 0.00	QC 8 - 12	
					QC 8 - 14	
					QC 8 - 17	
					QC 8 - 20	
					QC 8 - 25	
					QC 8 - 3	
					QC 8 - 32	
					QC 8 - 33	
					QC 8 - 35	
					QC 8 - 39	
					QC 8 - 4	

				QC 8 - 44	
				QC 8 - 45	
				QC 8 - 49	
				QC 8 - 58	
				QC 8 - 8	
				QC 8 - 9	
				QC 8 - 68	
				QC 8 - 67	
				QC 8 - 1 (A)	
				QC 8 - 47	47 11-10-17
				QC 8 - 40	9-89
				QC 8 - 52	
				QC 8 - 23	
				QC 8 - 57	
				QC 8 - 76	
				QC 8 - 61	
150 Crosstubes - 2 - B4B	1 pcs	11/22/19	0.00 0.81	Crosstubes - 1 - B4B	
				Crosstubes - 2 - B4B	
				Crosstubes - 3 - B4B	20 11-10-21
				Crosstubes - 4 - B4B	
190 Packaging 3-1 - Stock - B4B	1 pcs	11/22/19	0.00 0.00	Packaging 3 - 1 - B4B	
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	
				Packaging 3 - 9 - B4B	
				Packaging 3 - 10 - B4B	
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	
				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	20 11-10-21
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	

				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
200 QC 21 - SA	1 pcs	11/22/19	0.00 0.00	QC 21 - SA - 21	
				QC 21 - SA - 70	DAS
				QC 21 - SA - 53	21
					9-53
Part Op 100 - TL-40 (Mori Seiki CNC Lathe Large) 1-Cut tube on chop saw, leave extra mat'l for facing and install plugs 350-241 Descriptions: on both ends. 2-Face both sides of tube. 3- Turn program 02000 section on both side as per folio FB468. 4- Turn program 03000 section on both side as per folio FB468. 5- Blend transsition lines only with belt sander 60 grit. Folio rev: <u>A</u> Dwg rev: <u>A</u> 110 - (QC2- Inspect parts off machine FAI/FAIB) 120 - TL-40 (Mori Seiki CNC Lathe Large) 1- Turn program 04000 section on both side as per folio FB468. 2- Turn program 05000 section on both side as per folio FB468. 3- Blend transsition lines only with belt sander 60 grit. 4-Scribe part # as per Dwg D350-748-243. Folio rev: <u>A</u> Dwg rev: <u>A</u> 130 - (QC2- Inspect parts off machine FAI/FAIB) PERFORME ULTRASONIC MEASURMENT 140 - (QC8- Inspect parts - second check) 150 - Crosstubes-2 (Crosstubes) 1-Grind machining marks 190 - Identify and stock in kanban rack 200 - (QC21- Final Inspection - Work Order Release)					
Job BOM					
Part / Item	Component Name	Quantity	Operation	Container	
D6021-125	Crosstube Material - 17-4Ph SS	1 pcs (1 ea)	100-Mori Seiki TL-40 - 1	F151690	
Job Allocations					
Operation	Component Part	Required	Inventory	Allocated	
100-Mori Seiki TL-40 - 1	D6021-125	1	31	0	
Part Specifications					
Specifications could not be found.					

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Container No: S219880



Part: D350-748-243TRN

Job No: 201055

Serial No/Batch: S219880

Revision: A

Inspector:

Exp Date:

Instructions:

Date: 10/04/19

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DART AEROSPACE LTD	Work Order:	201055
Description: Crosstube Assembly (AS350/355 High Aft SS)	Part Number:	D350-748-243
Inspection Dwg: D350-748-243 Rev: A		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+/-0.005	2.241	✓		CNC 04	
	2.180	+0.005/-0.000	2.185	✓		↓	
	2.180	+0.005/-0.000	2.184	✓			
	2.208	+0.005/-0.000	2.213	✓			
	2.234	+0.005/-0.000	2.239	✓			
	2.253	+0.005/-0.000	2.258	✓			
	2.272	+0.005/-0.000	2.277	✓			
	2.299	+0.005/-0.000	2.304	✓			
	0.063	+/-0.010	0.063	✓		CNC 08	
	5.25	+/-0.060	5.257	✓		CNC 08	
	R0.063	+/-0.010	0.063	✓		Rg	
	R0.50	+/-0.030	0.50	✓		Rg	
SIDE B	2.240	+/-0.005	2.244	✓		CNC 04	
	2.180	+0.005/-0.000	2.185	✓		↓	
	2.180	+0.005/-0.000	2.183	✓			
	2.208	+0.005/-0.000	2.212	✓			
	2.234	+0.005/-0.000	2.239	✓			
	2.253	+0.005/-0.000	2.258	✓			
	2.272	+0.005/-0.000	2.277	✓			
	2.299	+0.005/-0.000	2.304	✓			
	0.063	+/-0.010	0.063	✓		CNC 08	
	5.25	+/-0.060	5.250	✓		CNC 08	
	R0.063	+/-0.010	0.063	✓		Rg	
	R0.50	+/-0.030	0.500	✓		Rg	
	124.70	+/-0.060	124.725	✓		Tape	

Item	Qty	Part Number	Description
1	X	D350-748-243	CROSS TUBE ASSEMBLY (AS 350/355 HI AFT)
2	1	D8021-125	CROSSTUBE
3	2	D3502-1	SUPPORT
4	2	D5123-7	CLAMP CUSHION
5	1	AETC-1032	INSERT
6	2	MS21920-20 OR MS21920-21/22	CLAMP (PER DART SPEC. M-MS21920-20/21/22)
7	1	NAS114900363R	WASHER (OR AN880C10)
8	1	NAS1835-3-8	SCREW (OR MS51958-53)
9	AVR	PROSEAL 890 B-2	SEALANT, AMS-S-8902 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D8021-125
FINISHED LENGTH AFTER TURNING = 124.70±0.08 (AFTER BENDING/TRIMMING = 122.70 REF)
- 2) FINISH: PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCE: PER DART QSI 016 UNLESS OTHERWISE NOTED.
WALL THICKNESS ECCENTRICITY PER DART QSI 038 7.2
MIN. ALLOWABLE WALL IS -0.020 FROM NOMINAL
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-243" AND BATCH NUMBER ON INSIDE OF CUFF
- 7) WEIGHT: 28.85 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.280 HOLE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 10) TURNING
BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 11) BENDING
BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES PER SIDE. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D. ON TOP HALF OF BEND, AND 8% ON BOTTOM HALF OF BEND.
- 12) MAX AMPLITUDE OF RIPPING ALONG BENT PORTION OF THE TUBE IS 0.030 (2N A1-3)
- 13) MAX TWIST: WITH TUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.38 (2N C1-3).

ASSEMBLY

- 14) TO INSTALL D3502-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.02" TO 0.06" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8902 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 201055

DEO ATTACHED

RELEASED
2015 MAR 18

RELEASED

UNDER REVIEW

15/12/16

15/12/16

2015 MAR 18
15/12/16

A	NEW ISSUE	DESCRIPTION	CP	BY	DATE
REV.					
DESIGN					
DRAWN					
CHECKED					
MFG. APPR.					
APPROVED					
DE APPR.					
DATE	15.01.21				

DART AEROSPACE LTD

HARTFORD, CONNECTICUT, USA

DRAWING NO.

D350-748-243

REV. A

SHEET 1 OF 4

SCALE

CROSSTUBE (AS 350/355 HI AFT)

NTS

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DRAWING NO. D350-748-243	TITLE CROSSTUBE	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D350-748-243-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN qp	CHECKED A.S.		MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 15.11.18	DATE 15.11.18		DATE 14.02.19	DATE FEB 19 2016	DATE 2016.02.19		

AMEND NOTE 2 (SHEET 1) AS FOLLOWS:

- 2) FINISH: PREPARE SURFACE PER DART QSI 005 4.1.4
 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 PAINT OUTSIDE PER DART QSI 005 4.2
 OR
 POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3

RELEASED
 2016-02-26
En 16-534

Entered: _____ Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only

NCR No. _____

DEPARTMENT/PROCESS

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐

Skid-tube ☐
Machining ☐
Large Fab ☐

Cross tube ☐
Small Fab ☐
Finishing ☐

Eng. (Non-AW) ☐
Prod. Eng. Coord. ☐
Rec/Store/Packaging ☐

Engineering ☐
Water Jet ☐
Supplier ☐
Quality ☐

Date: _____ Sequence #: _____

QTY Affected: _____

MRB (QS1042)

Disposition

Description Work Order Deviation

Completed By _____

Lead hand / Supervisor _____

QC / QA Coordinator _____

Root Cause

Operator ☐
Manufacturing Process ☐
Equip/Tooling ☐
Handling/Preservation ☐
Material ☐
Product Improvement ☐
Process Improvement ☐
Human Factors ☐

FAULT CATEGORY

Pressure/Forced	Contamination	Power Loss/Surge	Positioned Wrong
Bending	Misaligned/off center	Folio/Program	Outside Tolerance
Crushing	BOM/Route	Grain Direction	Drawing
Cracks	Broken/Damage/Defect	Weld	Finish
Crimp/Kink/Ripple/Wave/Twist	Incomplete/Unclear Instructions	Wrong Stock Pulled	Part Lost/Missing
Marks/Chatter	Drill Holes	Out of Sequence	Misread
Mislabeled	Fit/Function	Off-set/Set-up	

Other/Details: _____